

AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0028]–[0030], [0034], [0037], [0047], [0048], [0051], [0052], and [0058] with the following corresponding replacement paragraphs.

[0028] The means for producing a rapid electric discharge may comprise means for storing electrical energy like a capacity bank 131, or a pulse compressor 132.

[0029] In the case where a capacity bank 131 is used, the electrodes may be connected directly to that capacity bank 131 to produce the rapid electric discharge.

[0030] Alternatively the electrodes are connected to the capacity bank 131 through a power on-off switch 133 which is switched on by a logic control element 134, to produce said rapid electric discharge.

[0034] The electrically insulating block may further act as a heat shield for a cryogenic target injector pinch 21, star pinch or capillary discharge configuration.

[0037] In this case, the device may comprise a pulse generator connected to the electrodes that triggers an electrical discharge as the plasma plume enters the space between the electrodes.

[0047] According to the first embodiment of the invention, the device for generating extreme ultraviolet (EUV) or soft X-ray radiation comprises a laser source for producing a laser radiation which is focused to intensities beyond 106W/cm² onto a dense target to produce a plasma, and electrodes located around the path of the plasma produced by the laser source, the electrodes being combined with means for producing a rapid electric discharge in the plasma with a characteristic time constant which is less than the time constant of the laser produced plasma expansion time (case of ~~DBPLL~~ DBLPP device).

[0048] The invention in this preferred form operates in the following way: a cold (i.e. liquid or solid) jet target, a spray target, a cluster target or an effusive gas target 1 is injected by a nozzle or another similar apparatus 2 into a first vacuum chamber 3 which is used as an interaction chamber. The laser interaction zone 4 on the target is surrounded by electrodes 5 which are held by some electrically insulating block 6, and constitute a discharge unit. The electrodes are arranged in either a Z- pinch, hollow cathode pinch, star pinch, or capillary discharge configuration. The electrically insulating block 6 which is preferably cryogenically cooled and presents a high thermal conductivity, thereby allows evacuating the heat load produced by absorption of both unused in-band and out-of-band radiation. This block 6 also acts as a heat shield for a

possible cryogenic target injector 21. The jet target enters a second vacuum chamber 7 that is connected to the ~~source~~first vacuum chamber 3 via an orifice 8. The laser impact on the target 1 in the interaction zone 4 produces a plasma (either emitting EUV radiation or not) that triggers a discharge (which means that the discharge power supply 13 does not necessarily need an own trigger unit). Useful EUV light can be collected in a large cone having its symmetry axis perpendicular to the drawing plane of Figure 1A and pointed towards the reader. This large cone 10 can be seen on Figure 2 which is a side view of Figure 1A and shows the laser beam 11 generated by a ~~laser source 21~~laser source 12 and focused on the interaction zone 4, as well as the produced useful EUV radiation which is emitted to the right into a large cone 10.

[0051] The rapid discharge may be produced by the electrode system 5 which is directly connected to a ~~capacitor~~capacity bank (not shown) 131.

[0052] Alternatively, the rapid discharge may be achieved through a power on-off switch 133 which is switched on by a logic control element 134 and is connected between the electrodes 5 and the ~~capacitor~~capacity bank 131.

[0058] The device for generating extreme ultraviolet (EUV) or soft X-ray radiation by using an hybrid combination of laser produced and discharge produced approach is advantageous for generating short wavelength radiation in the sense that a large portion of the driving power is ~~expensive~~cheap electrical power and that the laser plasma enables the discharge to occur at higher densities and/or more confined than possible with discharges alone, and that the laser plasma induces the discharge to occur at larger distances from the electrodes to avoid corrosion and to limit the heat load.

None of the above amendments adds any new matter.